

**Attorney Docket No. 017447-0170****IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**Applicant:** Koichi Watanabe et al.  
**Title:** SPUTTERING TARGET  
**Appl. No.:** 09/720,730  
**Filing Date:** December 29, 2000  
**Examiner:** S. Ip  
**Art Unit:** 1742

**DECLARATION UNDER 37 C.F.R. § 1.132**

Commissioner for Patents  
Washington, D.C. 20231

Sir:

I, Koichi Watanabe, declare as follows:

(1) I am an inventor of the above identified application. I am a Japanese citizen, residing at 1-782, Futoo-cho, Kohoku-ku, Yokohama-shi, Kanagawa-ken, Japan. I graduated in March 1993, from the Muroran Institute of Technology, where I pursued the courses in the department of Materials Science and Engineering. Since April 1993, I have been worked in Material & Components Development Department of Kabushiki Kaisha TOSHIBA. I have heretofore filed the following patent applications related to the technology of sputtering target for semiconductor;

Japanese patent applications:	5 affairs
US patent applications:	3 affairs

(2) I have reviewed claims 1 and 18 of the above identified application.

(3) One skilled in the art, such as myself, would not reasonably interpret claims 1 and 18 to contain a zero amount of Ta and oxygen, respectively. Claim 1 requires that the sputtering target contain an amount of Ta as an impurity. One skilled in the art would understand that if a sputtering target includes an amount of a substance as an impurity, that target must necessarily include some non-zero amount of the impurity. Claim 1 also requires that the Ta content in the target is 3000 ppm or less. One skilled in the art would

**Attorney Docket No. 017447-0170**

reasonably interpret the requirement that the Ta content in the target be 3000 ppm or less as being an upper limit on the Ta content. One skilled in the art would not reasonably interpret the requirement that the Ta content in the target be 3000 ppm or less as including 0 ppm in light of the requirement in claim 1 that the sputtering target contain an amount of Ta as an impurity. Similarly with respect to claim 18, one skilled in the art would not reasonably interpret that claim to contain a zero amount of oxygen.

(4) JP 62-103335 provides further evidence that one skilled in the art would not reasonably interpret claims 1 and 18 to contain a zero amount of Ta and oxygen, respectively. I understand that JP 62-103335 was submitted in the Information Disclosure Statement filed on December 29, 2000 in the above identified application. JP 62-103335 discloses super high purity Nb having an excellent workability for a superconductive material and discloses the Nb as containing 30 ppm or less of Ta and 10 ppm or less of each of oxygen, carbon, nitrogen and hydrogen, which is produced by a high quality manufacturing method. As demonstrated by JP 62-103335, Ta and oxygen exist as impurities in Nb even for super high purity Nb produced by high quality manufacturing methods. One skilled in the art would reasonably interpret claims 1 and 18 as requiring some amount of Ta and oxygen impurity as evidenced by JP 62-103335, because these impurities exist even in super high purity Nb.

(5) One skilled in the art would further find it unreasonable to interpret claims 1 and 18 as containing a zero amount of Ta and oxygen, respectively, in light of the dispersion requirements of those claims. Claims 1 and 18 respectively require that the Ta and oxygen be present in the sputtering target within a particular dispersion range. It is unreasonable to interpret an element to have a dispersion within a target when that element is not present at all within the target. Thus, it is unreasonable to interpret claims 1 and 18 as containing a zero amount of Ta and oxygen in light of the dispersion requirements of those claims.

**Attorney Docket No. 017447-0170**

(6) I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: April 5, 2004

Koichi Watanabe

Koichi Watanabe